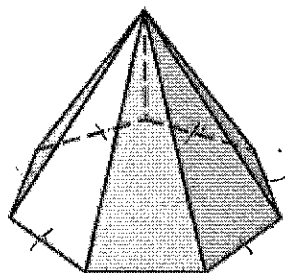
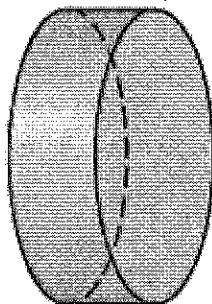
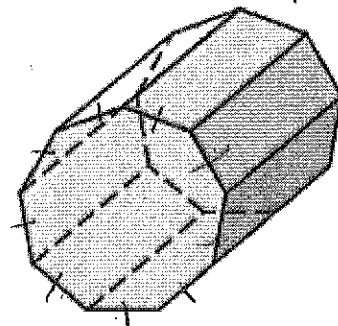


Name _____ Date _____

201 Chapter 12.1-12.5 Review for quiz

Determine whether the solid is a polyhedron. If it is, name the polyhedron.

Explain-your reasoning.

1.
 yes
 heptagonal
 pyramid2.
 not3.
 nonagonal prismUse Euler's Theorem to find the value of n .

$$E + 2 = F + V$$

4. Faces:
- n
-
- Vertices: 12
-
- Edges: 16

$$16 + 2 = F + 12$$

$$\textcircled{6} = F$$

5. Faces: 14
-
- Vertices: 24
-
- Edges:
- n

$$E + 2 = 14 + 24$$

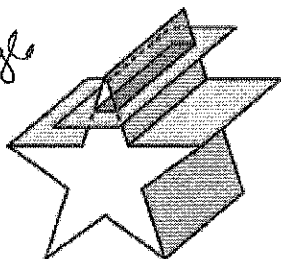
$$\textcircled{E = 36}$$

6. Faces: 29
-
- Vertices:
- n
-
- Edges: 81

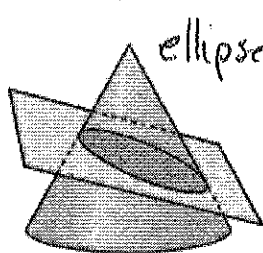
$$81 + 2 = 29 + n$$

$$\textcircled{54 = n}$$

Describe the cross section formed by the intersection of the plane and the solid.

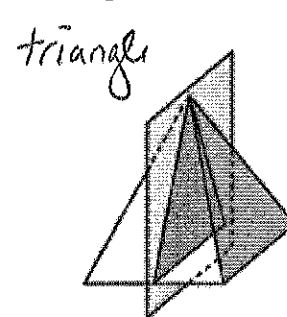
7.
 rectangle

8.



ellipse

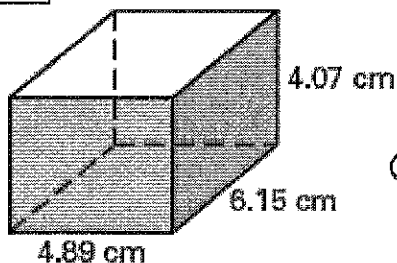
9.



triangle

Find LA, SA, and V for the following right prisms.

10.



$$P = 22.08 \text{ cm}$$

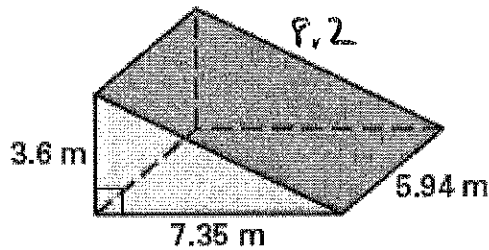
$$B = 30.07 \text{ cm}^2$$

$$\textcircled{LA = 22.08 \cdot 4.07 = 89.9 \text{ cm}^2}$$

$$SA = 89.9 + 2(30.07) = 150.0 \text{ cm}^2$$

$$V = 30.07 \cdot 4.07 = 122.4 \text{ cm}^3$$

11.



$$P = 19.15 \text{ m}$$

$$B = \frac{1}{2} 3.6(7.35) = 13.23 \text{ m}^2$$

$$3.6^2 + 7.35^2 = x^2$$

$$8.2 = x$$

$$LA = 19.15(5.94) = 113.8 \text{ m}^2$$

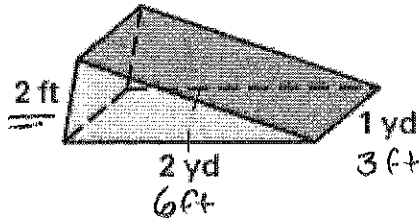
$$SA = 113.8 + 2(13.23) = 140.3 \text{ m}^2$$

$$V = 13.23(5.94) = 78.6 \text{ m}^3$$

$$3 \text{ ft} = 1 \text{ yd}^*$$



12.



$$P = 14 \text{ ft}$$

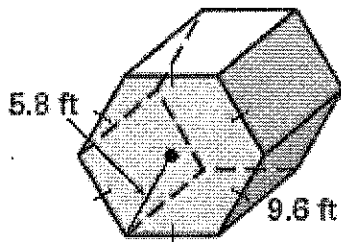
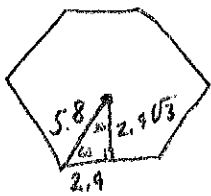
$$B = 5.9 \text{ ft}^2$$

$$LA = 14 \cdot 3 = 42 \text{ ft}^2$$

$$SA = 42 + 2(5.9) = 53.8 \text{ ft}^2$$

$$V = 5.9(3) = 17.7 \text{ ft}^3$$

13.



$$P = 5.8 \cdot 6 = 34.8 \text{ ft}$$

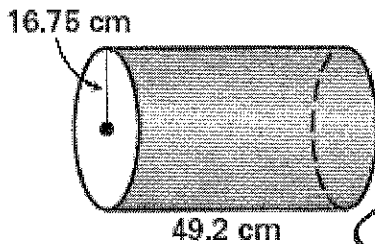
$$B = \frac{1}{2} (2.9\sqrt{3})(34.8) = 87.4 \text{ ft}^2$$

$$LA = 34.8(9.6) = 334.1 \text{ ft}^2$$

$$SA = 334.1 + 2(87.4) = 508.9 \text{ ft}^2$$

$$V = 87.4(9.6) = 839.0 \text{ ft}^3$$

14.



$$P = 33.5 \text{ ft} = 105.2 \text{ cm}$$

$$B = 280.6 \pi \approx 881.4 \text{ cm}^2$$

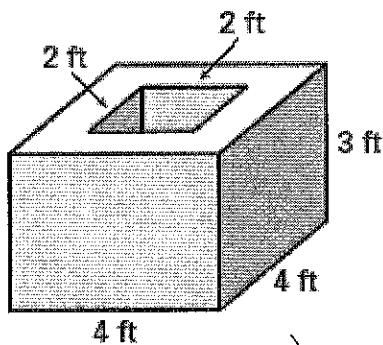
$$LA = 105.2(49.2) = 5175.8 \text{ cm}^2$$

$$SA = 5175.8 + 2(881.4) = 6938.6 \text{ cm}^2$$

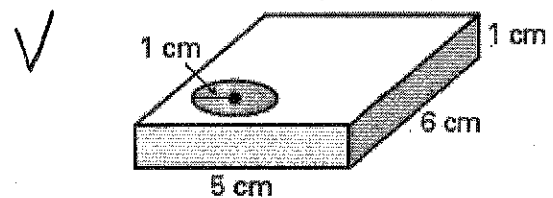
$$V = 881.4(49.2) = 43364.1 \text{ cm}^3$$

Find the surface area and volume for the solids below.

15.



16.



$$LA_{\text{Box}} + LA_{\text{Sm}} + 2(\text{Area of Base})$$

$$16 \cdot 3 + 8 \cdot 3 + 2(16 - 4)$$

$$96 \text{ ft}^2$$

$$V_{\text{prism}} - V_{\text{cyl}}$$

$$30 \text{ cm}^3 - \pi$$

$$26.9 \text{ cm}^3$$

$$SA = LA + 2B$$

$$2\pi rh + 2\pi r^2$$

$$r = 4h$$

17. The surface area of a cylinder is 1000π square centimeters. The radius of the cylinder is four times the height. What is the height of the cylinder?

$$1000\pi = 2\pi(4h)h + 2\pi(4h)^2$$

$$1000\pi = 8\pi h^2 + 32\pi h^2$$

$$1000\pi = 40\pi h^2$$

$$h^2 = 25$$

$$h = 5 \text{ cm}$$

18. The surface area of a cylinder is 198π square yards. The height of the cylinder is ten times the radius. What is the radius of the cylinder?

$$h = 10r$$

$$198\pi = 2\pi r \cdot 10r + 2\pi r^2$$

$$20\pi r^2$$

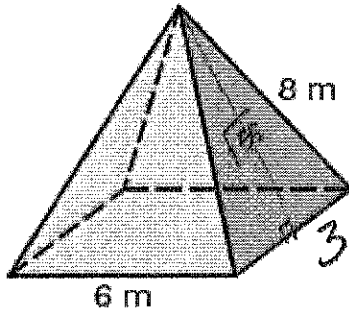
$$22\pi r^2$$

$$9 = r^2$$

$$r = 3 \text{ yd}$$

Find the LA, SA, and V for the regular pyramids and cone below.

19.



$$P = 24 \text{ m}$$

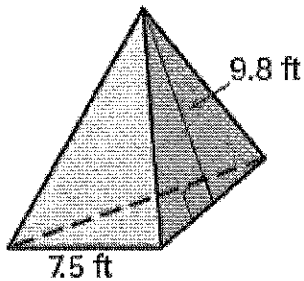
$$LA = \frac{1}{2} 24 \cdot \sqrt{55}$$

$$12\sqrt{55} \text{ m}^2$$

$$\approx 89.0 \text{ m}^2$$

20.

Base



$$SA = 110.3 + 24.4$$

$$134.7$$

$$\text{ft}^2$$

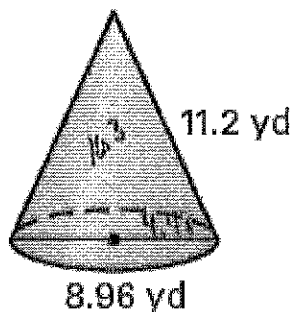
$$p = 7.5 \times 3 = 22.5 \text{ ft}$$

$$B = \frac{7.5^2 \sqrt{3}}{4} \approx 24.4$$

$$\text{ft}^2$$

$$LA = \frac{1}{2} 22.5 (9.8) = 110.3$$

21.

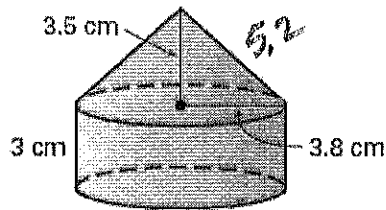


$$V = \frac{1}{3} 4.48^2 \pi \cdot 11.2$$

$$V = 216.5 \text{ yd}^3$$

Find the SA and V of the solids below.

22.

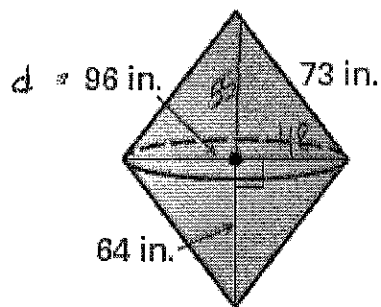


$$SA = LA + B + LA_{\text{con}}$$

$$7.6\pi \cdot 3 + 3.8^2\pi + \frac{1}{2} 7.6\pi \cdot 5.2$$

$$= 179.1 \text{ cm}^2$$

23.



$$V = \frac{1}{3} Bh + \frac{1}{3} Bh$$

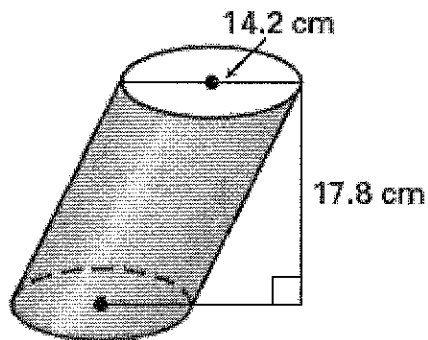
$$\frac{1}{3} 48^2\pi 55 + \frac{1}{3} 48^2\pi 64$$

$$132700.9 + 154415.6$$

$$287116.5 \text{ in}^3$$

Find the volume of the solid below.

24.



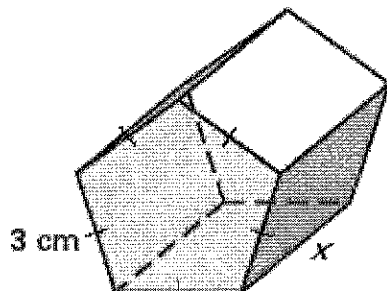
$$V = Bh$$

$$V = 7.1^2\pi \cdot 17.8$$

$$897.3\pi$$

$$2818.9 \text{ cm}^3$$

25. $V = 78 \text{ cm}^3$ Solve for x.



$$\tan 36 = \frac{1.5}{a}$$

$$a = 2.06$$

$$V = Bh$$

$$78 = \frac{1}{2} 2.06(15) h$$

$$78 = 15.48 h$$

$$5.0 = h$$

$$\text{cm}$$

